

WHAT IS CLAIMED IS:

1/ A sound insulation assembly for mounting in a part presenting a longitudinal direction and a tubular wall, the assembly comprising:

- 5 · a piece of material that is thermally expandable to form a foam, suitable for filling the through section of the part; and

 · a support comprising:

- retaining means for retaining said piece of
10 expandable material prior to expansion; and

 · fixing means for fixing to a first wall
portion of the part and coupled to said retaining means;
 wherein said piece of expandable material is shaped
in the form of a wafer presenting two parallel main faces
15 and extending essentially in a main plane away from the
first wall portion towards the diametrically opposite
wall portion, and wherein said support allows said wafer
to expand in all directions.

20 2/ A sound insulation assembly according to claim 1, in which the wafer extends essentially to about one-fourth to about one-half the distance between the two diametrically opposite wall portions.

25 3/ A sound insulation assembly according to claim 2, in which the wafer is mounted either across the tubular part or longitudinally along the axis of said part.

30 4/ A sound insulation assembly according to claim 1, in which the fixing means are formed by a plate for clipping, for crimping, or for sticking against the inside wall of the tubular part.

35 5/ A sound insulation assembly according to claim 4, in which the retaining means are constituted by a clamp formed by resilient blades for clamping against the faces of the wafer.

6/ A sound insulation assembly according to claim 5, in which the coupling between the retaining means and the fixing means is formed by a connection gutter.

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7/ A sound insulation assembly according to claim 1, in which the fixing means are formed by a clip constituted by at least one support arm terminated by flexible tabs, the clip being engaged through an opening formed in the wall of the tubular part.

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8/ A sound insulation assembly according to claim 7, in which the retaining means are constituted by a clamp having hooks which penetrate into the wafer.

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9/ A sound insulation assembly according to claim 7, in which the retaining means are constituted by clip means similar in shape to the fixing means.

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10/ A sound insulation assembly according to claim 5, in which the resilient blades and the hooks of the clamp are disposed in alternation on either side of the wafer.

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11/ A sound insulation assembly according to claim 8, in which the coupling between the retaining means and the fixing means is formed by support fork branches, the hooks and the retaining clips being mounted on said fork branches.

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12/ A sound insulation assembly according to claim 9, in which assembly polarization is provided between the retaining means and the fixing means, by making the retaining clip of dimensions that are significantly smaller than those of the fixing clips.

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13/ A sound insulation assembly according to claim 12, in which a connection rod is provided between the retaining

and fixing clips, the retaining rod being of dimensions considerably smaller than those of the arm of the fixing clip.

5 14/ A sound insulation assembly according to claim 1, in which the wafer support is made by molding a metal preform.

10 15/ A sound insulation assembly according to claim 1, in which the wafer support is made by injection molding a thermoplastic material.

15 16/ A sound insulation assembly according to claim 1, in which the wafer support is formed by an adhesive strip having the same ingredients as the expandable wafer, together with a resin of phenolic or equivalent type, the ingredients being taken in proportions that are suitable for forming a material that is flexible and suitable for adhering both to the expandable wafer and to the wall of
20 the tubular part.

25 17/ A sound insulation assembly according to claim 16, in which the adhesive strip is either T-shaped by being folded onto itself, or else angle-bracket shaped, or else in the form of a plate forming a junction between the expandable wafer and the inside face of the wall of the part.

30 18/ A sound insulation assembly according to claim 17, in which the expandable wafer is either stuck to the foot of the strip, or else is engaged in said foot.

35 19/ A sound insulation assembly according to claim 17, in which adhesive bonding is performed between the wafer and one or two brackets.

20/ A sound insulation assembly according to claim 17, in which studs of expandable material consolidate retention of the wafer on the adhesive plate.

5 21/ An acoustic insulation assembly according to claim 1, in which the material suitable for thermally expanding is a compound of a vulcanizable synthetic rubber of the butyl, halogenated butyl, or nitrile type, in which a swelling agent has been added in order to form a filler
10 the quantity of the swelling agent being a function of the desired expansion ratio.

22/ A tubular part, in particular a motor vehicle bodywork part, fitted with at least one sound insulation
15 assembly according to claim 1, the wafer being expanded thermally while applying paint to the part.